

SECOND SEMESTER DIPLOMA EXAMINATION IN MECHANICAL
ENGINEERING—OCTOBER, 2013

MANUFACTURING PROCESS

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Give any two advantages of ultrasonic inspection test.
2. List the different types of comparators used for comparing the dimension with a standard.
3. List any four properties required for a good moulding sand.
4. List any four major defects found in welded joints.
5. Mention any four physical properties of materials. (5×2=10)

PART—B

II Answer *any five* questions. Each question carries 6 marks.

1. Define the following mechanical properties :
(i) Creep (ii) Fatigue failure (iii) Brittleness
2. Explain the use of plug gauge, ring gauge and thread gauge.
3. Explain magnetic particle test.
4. Compare the characteristics of welding and soldering.
5. Differentiate between a comparator and a gauge.
6. Explain pit moulding.
7. Explain the use of runner and a riser in a gating system. (5×6=30)

PART—C

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT – I

- III (a) Explain the procedure for the creep test. 9
- (b) Define the terms :
- (i) Elasticity (ii) Endurance limit (iii) Thermal conductivity. 6

OR

- IV (a) Draw the stress strain graph of mild steel specimen undergoing a tensile test and explain the terms elastic limit, yield point and breaking stress. 10
- (b) Differentiate between destructive and non-destructive testing. Name any four non-destructive tests. 5

UNIT – II

- V (a) Sketch the figure of a micrometer and label its parts. Mention its advantages and disadvantages in taking measurements. 7
- (b) List the different types of comparator. Give the advantages of a mechanical comparator. Briefly explain the working of a dial indicator. 8

OR

- VI (a) The divisions on the main scale of a vernier calliper are 0.5mm apart. The vernier has 100 divisions equal in length to 98 main scale divisions. What is the accuracy of the instrument ? 5
- (b) Explain the principle and working of an electrical comparator. Give its advantages and limitations. 10

UNIT – III

- VII (a) Explain the principle and procedure of TIG welding with the help of a figure. 10
- (b) List the advantages and limitations of oxy acetylene welding. 5

OR

- VIII (a) Compare the characteristics of AC welding and DC welding. 7
- (b) Define the following terms : 8
- (i) Fullering (ii) Brazing (iii) Upsetting (iv) Forging.

UNIT – IV

- IX (a) Define pattern allowance. Why is it necessary ? List the different types of allowance. Briefly explain any two. 10
- (b) List the different marking and measuring tools used in carpentry. Briefly explain the use of a try square. 5

OR

- X (a) Write short notes on : 8
- (i) Reaming (ii) Seasoning (iii) Venting (iv) Tapping.
- (b) Compare the characteristics of softwood and hardwood. Explain the different types of seasoning methods used. 7